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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,676	11/25/2003	Steven A. Rogers	006389.00005	7252

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EXAMINER

SCHEIBEL, ROBERT C

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

34

Office Action Summary	Application No. 10/722,676	Applicant(s) ROGERS, STEVEN A.	
	Examiner Robert C. Scheibel	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-24 and 26-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-24 and 26-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/25/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Examiner acknowledges receipt of the Request for Continued Examination (RCE) filed 7/25/2006.
- Claims 1-19 and 25 have been cancelled with this amendment.
- Claims 20-24 are currently amended.
- Claims 26-44 are newly added.
- Claims 20-24 and 26-44 are currently pending.

Response to Arguments

1. Applicant's arguments, see page 14, filed 7/25/2006, with respect to the objection to the specification (title) have been fully considered and are persuasive. The objection to the specification (title) has been withdrawn.
2. Applicant's arguments, see pages 14-15, filed 7/25/2006, with respect to the rejection of claims 1-20 under 35 U.S.C. 103(a) have been considered but are moot in view of the new grounds of rejection. The arguments relating to Ofek are moot as the rejection is now under 35 U.S.C. 103(a) over Oran in view of U.S. Patent 6,141,355 to Palmer et al. See the rejection below for more detail.
3. Applicant's arguments, see pages 15-16, filed 7/25/2006, with respect to the rejection of claims 21-25 under 35 U.S.C. 103(a) have been considered but are moot in view of the new grounds of rejection.

The rejection is now under 35 U.S.C. 103(a) over Oran in view of U.S. Patent 6,141,355 to Palmer et al and in further view of Howe. However, applicant's arguments regarding the Howe reference may still apply and as such are addressed here.

In the last paragraph of page 15, Applicant argues that Howe fails to overcome the deficiencies of Oran and Ofek as applied to claim 20. This argument is moot as claim 20 is rejected under new grounds. In the first paragraph of page 16, Applicant argues that the combination of Oran and Ofek with Howe is improper. Applicant argues that Howe discloses a layer 1 switching system which is distinct from a packet switching system. Examiner respectfully disagrees and believes that the rejection below using Howe is valid. Howe does in fact disclose a layer 1 switching system. However, as is clear from the abstract, this is merely a means for providing efficient service to the packets which are at the network layer. At layer 3, the system is still transferring packets; Howe merely allows the core network to provide more efficient service to certain types of packets by forwarding them at layer 1 between certain nodes.

Claim Objections

4. Claims **29 and 37** are objected to because of the following informalities: "configure to receive" in line 8 should be changed to "configured to receive". Appropriate correction is required.
5. Claim **33** is objected to because of the following informalities: "the transmitting node" in line 9 should be changed to "the device", as transmitting node is not referenced earlier in the claims. Appropriate correction is required.

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6. Claim **37** is objected to because of the following informalities: “the plurality of modules” in lines 12-13 should be changed to “the one or more modules”. Appropriate correction is required.

7. Claims **38 and 39** are objected to because of the following informalities: the phrase “the LAN” in line 2 of claim 38 should be changed to “a LAN”. Examiner assumes this what Applicant intended. However, if Applicant chooses not to make this specific change, the phrase “the LAN” in both line 2 of claim 38 and lines 1-2 of claim 39 should be given proper antecedent basis earlier in the claim. Appropriate correction is required.

8. Claim **42** is objected to because of the following informalities: the phrase “the transmitting node” in line 10 should be changed to “a transmitting node”. Examiner assumes this what Applicant intended. However, if Applicant chooses not to make this specific change, the phrase “the transmitting node” in line 10 of claim 42 should be given proper antecedent basis earlier in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims **20, 26, 28-29, 34, 36-38, and 43** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,240,084 to Oran et al in view of U.S. Patent U.S. Patent 6,141,355 to Palmer et al.

Regarding claim **20**, Oran discloses a method of reducing contention in a Local Area Network (LAN) switch, comprising the steps of: (1) collecting in a single device a plurality of different data signals including at least voice data (analog voice received at the telephony endpoint cards and the data received at the peripheral cards 24); (2) converting each of the plurality of different data signals into digital form (done in the telephony endpoint cards 16 of Figure 2); (3) transmitting the data signals in digital form (step 86 of Figure 4) from step (2) over a backplane bus to a CPU (voice/data router card 14 of Figure 2) in the single device; (4) in the CPU, converting the digital data into network packets destined for delivery over the LAN switch (step 88 of Figure 4 and lines 59-62 of column 2).

Regarding claim **29**, Oran discloses a device configured to reduce contention in a LAN switch, the device comprising: a CPU (voice/data router card 14 of Figure 2); a backplane bus (bus 26 of Figure 2); a plurality of modules coupled to the backplane bus (the modules coupled to the backplane bus), where each module is configured to receive data of a different type and present the received data to the CPU over the backplane bus; and a packet network interface (LAN interface 30) connectable to a Local Area Network (LAN) switch, wherein the device is configured to perform the steps of: (1) collecting a plurality of different data signals from the plurality of modules (analog voice received at the telephony endpoint cards and the data received at the peripheral cards 24); (2) converting each of the plurality of different data signals into digital form (done in the telephony endpoint cards 16 of Figure 2); (3) transmitting the data

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signals in digital form (step 86 of Figure 4) from step (2) over the backplane bus to the CPU; (4) in the CPU, converting the digital data into network packets destined for delivery over the LAN switch (step 88 of Figure 4 and lines 59-62 of column 2).

Regarding claim 37, Oran discloses a system for reducing contention in a LAN switch comprising a plurality of devices, each said device comprising: a CPU (voice/data router card 14 of Figure 2); a backplane bus (bus 26 of Figure 2); a plurality of modules coupled to the backplane bus (the modules coupled to the backplane bus), where each module is configured to receive data of a different type and present the received data to the CPU over the backplane bus; and a packet network interface (LAN interface 30) connectable to a Local Area Network (LAN) switch, wherein the device is configured to perform the steps of: (1) collecting a plurality of different data signals from the plurality of modules (analog voice received at the telephony endpoint cards and the data received at the peripheral cards 24); (2) converting each of the plurality of different data signals into digital form (done in the telephony endpoint cards 16 of Figure 2); (3) transmitting the data signals in digital form (step 86 of Figure 4) from step (2) over the backplane bus to the CPU; (4) in the CPU, converting the digital data into network packets destined for delivery over the LAN switch (step 88 of Figure 4 and lines 59-62 of column 2).

Oran does not disclose expressly the step of scheduling the transmission of the network packets in such a way as to avoid contention in the LAN switch that would otherwise occur if the network packets had been processed by separate devices coupled to the LAN switch. Oran also does not disclose expressly the limitation of claim 20 that the data signals include video data. Oran also does not disclose expressly the limitation the internal timing system of claims 29 and 37. Oran also does not disclose expressly the limitations of claim 37 that each device is

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connected to the same LAN switch and that each device coordinates the scheduling of network packets over the LAN switch with the other devices so as to avoid contention in the LAN switch.

Palmer discloses the step of scheduling the transmission of the network packets in such a way as to avoid contention in the LAN switch (X-Hub 4) that would otherwise occur if the network packets had been processed by separate devices coupled to the LAN switch (see lines 33-40 of column 9, for example – clearly, the X-Hub is an Ethernet switch and prevents collisions (contention) that would have occurred in a conventional Ethernet hub). Palmer further discloses that these data signals include video signals in lines 23-28 of column 1 and lines 20-26 of column 10. Palmer further discloses the limitation of an internal timing system capable of synchronizing with one or more external time sources in lines 23-30 of column 14. Palmer further discloses the limitations that each device is connected to the same LAN switch (see figure 2) and that each device coordinates the scheduling of network packets over the LAN switch with the other devices so as to avoid contention in the LAN switch (see lines 33-40 of column 9, for example).

Oran and Palmer are analogous art because they are from the same field of endeavor of providing real-time services over a packet switched network. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Oran by modifying the server platform to be a device adapter with the properties described in Palmer. The motivation for doing so would have been to eliminate collisions for time-sensitive traffic, thus guaranteeing timely delivery as suggested in lines 12-13 of the abstract. Therefore, it would have been obvious to combine Palmer with Oran for the benefit of timely delivery of real-time traffic to obtain the invention as specified in claims 20, 29, and 37.

Regarding claims **26, 34, and 43**, the above combination of Oran and Palmer discloses the limitation that the LAN switch is an Ethernet LAN switch in that the X-Hub is an Ethernet switch for real-time or isochronous traffic (see lines 1-2 of column 5, for example).

Regarding claims **28 and 36**, the above combination of Oran and Palmer discloses the limitation that the plurality of different data signals originate from a plurality of local transmitters connected to the single device. See elements 16 and 24 in figure 2 of Oran as well as elements 100 and 200 in figure 2 of Palmer, for example.

Regarding claim **38**, the combination of Oran and Palmer discloses (see lines 27-34 of column 10) the limitation that at least one of the plurality of devices schedules packet delivery over the LAN by agreeing upon time slots (periods of time) during which network packets will be transmitted to the LAN switch (X-Hub 4).

3. Claims **21-24, 27, 30-33, 35, 39-42, and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,240,084 to Oran et al in view of U.S. Patent U.S. Patent 6,141,355 to Palmer et al and in further view of U.S. Patent 6,611,519 to Howe.

The combination of Oran and Palmer discloses all the limitations of parent claim 1 as described in the rejection under 35 U.S.C. 103(a) above. Oran, modified, does not disclose expressly the limitations of claims 21-25 regarding a proposed delivery schedule.

Regarding claims **21, 30, and 39**, Howe discloses the limitations that the scheduling step comprises: from a transmitting node, transmitting a proposed delivery schedule to an intended receiving node (see figure 35; the call setup request is the proposed delivery schedule), wherein the proposed delivery schedule indicates time slots corresponding to times during which the

transmitting node proposes to transmit packets to the intended receiving node (see figure 42 which provides more detail on the call setup request message; the desired start time and the periodic interval indicate the time slots when the transmitting node proposes to transmit packets);

receiving from the intended receiving node an indication as to whether the proposed delivery schedule is acceptable to the intended receiving node (see figure 35 which indicates in the box starting "If Terminating Edge Node..." that an accept message is sent back to the previous node if the requested times are available); and

if the proposed delivery schedule is acceptable, transmitting packets to the intended receiving node according to the proposed delivery schedule (this is disclosed throughout; consider lines 37-42 of column 4, for example).

Regarding claims **22, 31, and 40**, Howe discloses transmitting the query in the call setup message of figure 35. This is a query in that the receiving node can send feedback if this proposed schedule is not acceptable (see mode 2 in figure 36). The step of receiving from the intended receiving node a reception map indicating time slots during which transmission to the intended receiving node would not conflict is disclosed in the next best scheduled time of mode 2 of figure 36. The step of from the transmitting node, transmitting a proposed transmission map indicating time slots compatible with the reception map, during which the transmitting node intends to transmit packets is disclosed in steps 4 and 5 in columns 10 and 11 which indicate that the transmitting node will send another call setup message as part of the negotiation when it receives feedback from the receiving node. The limitation of the transmitting packets according to the proposed transmission map is disclosed throughout; consider lines 37-42 of column 4, for example.

Regarding claims **23, 32, and 41**, the last two steps are disclosed as indicated in claim 22 above. The step of transmitting a bandwidth requirement to an intended receiving node is disclosed in figure 42 in the bits per packet and packets per second fields which indicated a maximum bandwidth required to support the request.

Regarding claims **24, 33, and 42**, Howe discloses transmitting a query (call setup message of figure 35) to a designated master node for a LAN-wide (the schedule is setup from end-to-end) transmission map (this is a query in that the receiving node can send feedback if this proposed schedule is not acceptable (see mode 2 in figure 36)); receiving from the master node a LAN-wide transmission map indicating time slots during which transmission to an intended receiving node would not conflict with other transmitters (the next best scheduled time of mode 2 of figure 36); transmitting to the master node a proposed transmission map compatible with the LAN-wide transmission map, said proposed transmission map indicating time slots during which the transmitting node intends to transmit packets to the intended receiving node (steps 4 and 5 in columns 10 and 11 which indicate that the transmitting node will send another call setup message as part of the negotiation when it receives feedback from the receiving node); and transmitting packets to the intended receiving node according to the proposed transmission map (disclosed throughout - consider lines 37-42 of column 4, for example).

Oran, as modified, and Howe are analogous art because they are from the same field of endeavor of packet communication for time and delay sensitive data. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the combination of Oran and Palmer to add the layer 1 switching system as described in Howe. The motivation for doing so is twofold. First, this combination would provide a specific

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implementation of the WAN connectivity that Palmer indicates is desirable in lines 50-57 of column 2. Secondly, further motivation is to guarantee delivery and reduce delay of real-time packets as suggested by Howe in lines 55-67 of column 3. Therefore, it would have been obvious to combine Howe with the above combination of Oran and Palmer for the benefit of providing WAN connectivity and guaranteed delivery/reduced delay to obtain the invention as specified in claims 21-24, 30-33, and 39-42.

Regarding claims **27, 35, and 44**, the combination of Oran, Palmer, and Howe described above discloses the limitations that the Ethernet LAN switch is coupled to a WAN router. Consider Figure 1 for example. The Mid-Destination Router 3 is a WAN router.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 6:30-5:00 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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RCS 8-24-06

Robert C. Scheibel
Patent Examiner
Art Unit 2616

Seema S. Rao
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